



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,873	08/12/2002	Martyn Vincent Twigg	JMYT-258US	2938

7590 08/26/2003
Christopher R Lewis
Ratner & Prestia
One Westlakes Berwyn Suite 301
PO Box 980
Valley Forge, PA 19482-0980

EXAMINER

TRAN, DIEM T

ART UNIT	PAPER NUMBER
----------	--------------

3748

DATE MAILED: 08/26/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/070,873

Applicant(s)

TWIGG, MARTYN VINCENT

Examiner

Diem Tran

Art Unit

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11 and 12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 1-9, 11 and 12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8, 9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 3748

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities:

-On page 4, line 4, "ration" should be changed to --ratio--.

-On page 6, line 7, "8" should be changed to --λ--.

Appropriate corrections are required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 7-9, 12 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Hirota et al. (US Patent 6,199,374) in view of legal precedent.

Regarding claims 1, 2, 7, 8, 12, Hirota discloses a diesel engine having combustion management means and an exhaust gas aftertreatment system (17) without a NOx trap, which system comprising a platinum group metal catalyst liable to be poisoned by fuel sulfur to cause significant degradation for catalyst performance (see col. 3, lines 38-40, col. 28, lines 56-57), which engine is fueled, at least intermittently by a fuel containing such levels of sulfur as to cause poisoning of the catalyst (see col. 4, lines 59-67), wherein the combustion management means is effective to modulate the

Art Unit: 3748

rich air fuel ratio in pulses whereby the catalyst is regenerated (see Figure 32, col. 6, lines 62-67, col. 19, lines 38-42, col. 20, lines 66-67, col. 21, lines 1-8).

Hirota discloses the claimed invention except for specifying an optimum range of the air fuel ratio of peak enrichments about 0.9 or richer, the duration of peak enrichments of from 250 milliseconds to 5 seconds, and the duration of regeneration time of from 10 seconds to 10 minutes. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide specific optimum ranges of peak enrichments, and duration of the regeneration time, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claim 3, Hirota further discloses that the catalyst is an oxidation catalyst.

Regarding claim 4, Hirota further discloses that providing in at least one cylinder, such a quantity of fuel post combustion in the main power stroke, so as to reach in the exhaust gas lambda of less than 1 (see col. 27, lines 63-67).

Regarding claim 9, Hirota further discloses that the catalyst is in the temperature range 350-450°C during regeneration (see Figure 13, col. 10, lines 42-50, 64-67).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirota et al. (US Patent 6,199,374) in view of legal precedent as applied to claim 1 above, and further in view of Araki et al. (US Patent 5,850,735).

Art Unit: 3748

Regarding claim 5, Hirota discloses all the claimed limitations as discussed in claim 1 above, however, fails to disclose a particle or soot filter downstream of the catalyst. Araki teaches that it is conventional in the art, to utilize a soot filter (93) downstream of the catalyst (see Figure 9).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized a particle or soot filter downstream of the catalyst as taught by Araki in the modified Hirota method since the use thereof would have improved the efficiency of the emission control system.

Claims 6, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirota et al. (US Patent 6,199,374) in view of legal precedent as applied to claims 1,7 above, and further in view of official notice.

Regarding claim 6, 11, Hirota discloses all the claimed limitations as discussed in claims 1, 7 above, however, fails to disclose the diesel fuel containing at least 250 ppm sulfur.

It is well known to those with ordinary skill in the art that a typical diesel fuel contains sulfur in the aforementioned range of 250 ppm. Therefore, such disclosure by Hirota et al. is notoriously well known in the art so as to be proper for official notice.

Conclusion

Any inquiry concerning this communication from the examiner should be directed to Examiner Diem Tran whose telephone number is (703) 308-6073. The examiner

Art Unit: 3748

can normally be reached on Monday -Friday from 8:30 a.m.- 5:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reached on (703) 308-2623. The fax number for this group is (703) 872-9302. For After Final communication, the fax number is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

DT
August 19, 2003



Diem Tran
Patent Examiner
Art unit 3748



THOMAS DENION
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700